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CSCI 493 Big Data

Project 1: HetioNet

Neo4j:

Node model:

A screenshot of a social media post

Description automatically generated

Edge model:

A screenshot of a cell phone

Description automatically generated

Note:

1. start your Cassandra database:

- cassandra.bat -f

- cqlsh

2. start your Neo4j database

- neo4j using desktop application

Neo4j:

# It is python - flask app with Apache Cassandra Database and Neo4j Graph database:

1. Use: cmd to run the project:

- python main.py

2. find a relationship by "disease\_name"

- <http://127.0.0.1:5000/disease?name=disese_name>

Return:

alcohol dependence resembles bipolar disorder

alcohol dependence localizes blood

blood down-regulates SETD7

blood express HACD3

blood up-regulates CLECL1

alcohol dependence up-regulates ARHGAP4

alcohol dependence associates DRD2

alcohol dependence down-regulates NDUFB7

3. find treats of a disease by disease\_id:

“MATCH p= (c:Compound)-[:CtD]->(d:Disease{id:"Disease::DOID:0050741"})-->()-->()-->()->() RETURN p LIMIT 2”

- <http://127.0.0.1:5000/d_id?id=Disease::DOID:0050741e>

Return:

Disease name is alcohol dependence

Acamprosate treats alcohol dependence

alcohol dependence localize blood

alcohol dependence down-regulates SETD7

blood express HACD3

blood up-regulates CLECL1

4. add a new node:

- id, name and kind are required to create new node

- <http://127.0.0.1:5000/add_node?id=nodeID&name=nodeName&kind=nodekind>

Return: Success status

5. add a new edge:

- source, metaedge and target are required

- <http://127.0.0.1:5000/add_edges?source=nodesource&metaedge=nodemetaedge&target=nodetarget>

Return: Success status

7. insert all nodes from node.tsv:

- <http://127.0.0.1:5000/insert_all_nodes>

Return: Success status

8. insert all edges form edge.tsv:

- <http://127.0.0.1:5000/insert_all_edges>

Return: Success status